

SCN-1450/DIV

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the US Patent Application of

Junichi SATO

Serial No. 09/161,520

Filed: **September 29, 1998**

For: CHEMICAL-MECHANICAL  
POLISHING PROCESS

Group Art Unit: 1763

Examiner: R. Bueker

#30  
12/31/02  
NW

REPLY BRIEF

Commissioner for Patents  
**BOX AF**  
Washington, D.C. 20231

Sir:

This is a Reply Brief under 37 C.F.R. § 1.193, in response to the Examiner's Answer of September 26, 2002. Appellants respectfully request that all of the rejections established in the Examiner's Answer be reversed for reasons of record in the Appeal Brief and throughout the prosecution history of the application. The following arguments are directed to a few points made by the Examiner regarding the grouping of the claims, and the rejections under 35 U.S.C. § 112, first paragraph.

Grouping of the Claims

In section 7 of the Examiner's Answer, the Examiner disagrees with the grouping of the claims as set forth by Appellants in the Appeal Brief. The Examiner disagrees with the statement that claims 16 and 20 stand or fall alone, and

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characterizes these claims as product-by-process claims. However, it is respectfully pointed out that the claims before the Board are not product claims, but are method claims. Claims <sup>14</sup>16 and 20, by their method steps, further define the methods of their respective independent claims by a) setting forth the manner by which boehmite in the polishing process is made, and b) further describing the boehmite to the extent that a person of ordinary skill in the art would recognize how sodium aluminate can affect the abrasiveness of boehmite, for example. The discussion below regarding sodium aluminate establishes that there are several ways of making boehmite, and that a person of ordinary skill in the art would select using sodium aluminate as a starting material in some cases, and particles of Al in other cases, depending on the abrasiveness and other physical properties of the boehmite to be used. Claims 14 and 20 recite that a mixture of sodium aluminate and particles of Al would be used as starting materials. The Examiner has not cited any prior art that establishes why a person of ordinary skill in the art would use a mixture of starting materials to form boehmite for a polishing process. For this reason, claims 14 and 20 stand apart from the claims from which they depend.

Of course, if the Board affirms the rejections under 35 U.S.C. § 112, first paragraph, then claims 14, 20, 22, and 24 to 27 would fall together. However, these claims are not all

grouped together in the Appeal Brief because if the Board reverses the rejections under 35 U.S.C. § 112, first paragraph, then the claims are separable due to their differing subject matter, as established in the Appeal Brief.

Appellants acknowledge that there is a typographical error in the Appeal Brief, as claim 20 is grouped two different ways. The correct grouping of the claims is that claims 12 to 13 stand or fall together. Claim 14 stands or falls alone. Claims 16 to 19 stand or fall together. Claim 20 stands or falls alone. Claims 22, and 24 to 27 stand or fall together.

#### Rejections Under 35 U.S.C. § 112, First Paragraph

The Examiner asserts that the arguments in the Appeal Brief regarding the use of sodium aluminate when making boehmite, and regarding the effect on the total abrasiveness of the boehmite, amount to mere speculation. In doing a simple internet, Appellants found numerous articles that show how sodium aluminate is a starting material for producing boehmite. Attached hereto is a printout of the website <<<http://www.ripp-sinopec.com/english/index07-new-no2-2-7.htm>>> which cites the abstract of Canadian Patent CN1250746A clearly showing that sodium aluminate is one starting material for producing boehmite. Further, the website <<[http://www.nabaltec.de/seiten\\_d/boehmit\\_d/anwendungen/news\\_05\\_08\\_98.htm](http://www.nabaltec.de/seiten_d/boehmit_d/anwendungen/news_05_08_98.htm)>> attached hereto represents the same teaching,

although the technology involved in the document relates to flame retardant materials. A printout of the website <<<https://www.ecatalysts.com/supportsearch/Tutorials/alumina.htm>>> is also attached hereto in order to further support the familiarity that a person of ordinary skill in the art would have with the use of sodium aluminate to produce boehmite.

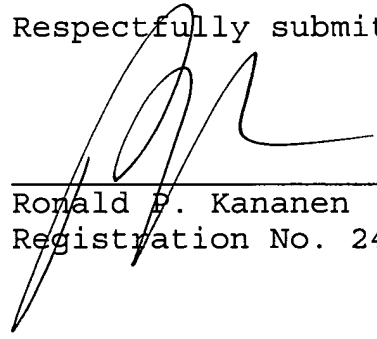
Nowhere in the prior art is there a teaching or suggestion that boehmite for a polishing process would be suitable if formed from a mixture of sodium aluminate and aluminum particles. However, as evidenced by the present specification and the abundance of literature teaching the use of sodium aluminate as a starting material, it is clear that a person of ordinary skill in the art would determine the concentration of sodium aluminate to be used relative to the concentration of aluminum particles. These starting materials would naturally differ in terms of particle size, particle uniformity, and pore size of the resulting boehmite. These differences would also affect the abrasiveness of the boehmite.

It is generally well settled that to comply with the enablement clause of the first paragraph of 35 USC 112, the disclosure must provide an adequate description such that the artisan could practice the claimed invention without undue experimentation. See *In re Scarbrough*, 500 F.2d 560, 182 USPQ 298 (CCPA 1974); *In re Brandstadter*, 484 F.2d 1395, 179 USPQ 286 (CCPA 1973). The test for enablement is not whether any

experimentation is necessary, but whether, if experimentation is necessary, it is undue. In re Angstadt, 537 F.2d 498, 190 USPQ 214 (CCPA 1976). Because the hypothetical person of ordinary skill could determine an appropriate concentration of sodium aluminate depending on the desired boehmite properties without undue experimentation, there is sufficient basis in the specification to adequately support the claims that recite the use of sodium aluminate in the methods of the present invention. Consequently, it is respectfully submitted that the rejections under 35 U.S.C. § 112, first paragraph be reversed.

Respectfully submitted,

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